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Weekly Commentary

The Mining Investment Experts

25 August 2018 Charts on Friday's Close

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Sentiment Oscillator is at the turning point

Have a look at the Sentiment Oscillator chart. It is right on the support line that extend back five years, to mid 2013. There is good reason to believe that we have seen the worst and we should see the sentiment turn upwards from here. If by chance this is a false signal and it goes lower, it doesn't have much further to fall to reach the levels seen in 2012/13 when the resources market was a complete wreck. It is hard to see the fundamentals being that bad again, so soon.

Turnaround might coincide with settling of the politics

The political circus in Canberra this week has obviously been a distraction to the market but it is difficult to say if it will continue to be so. For many months it has appeared that the Coalition Government was walking to a certain defeat at the next election, but what will happen now? Can the Liberals rejuvenate their standing? This will be the question of most relevance going forward. If not, then could an alternative Labor government be any worse, and relating it to the market, could the smaller end of the mining sector go any lower? Uncertainty always keeps the buyers away and these questions may keep us guessing for a while.

Gold is off the menu, but rationalisation will come

Gold is definitely off the menu for the time being. While brokers like Canaccord say they expect that gold will "ultimately" rise, that is hardly a buy recommendation today. It has fallen both in US dollars and Aussie dollars for a multitude of reasons but the strongest one is the continued strength of the US dollar.

However, that doesn't mean that you can't make money out the gold sector. There has been an absence of corporate activity for a while as this profitable sector has been concentrating on production and building up cash balances. If we are going to go through a period of softer gold prices we will probably see the largest, well-cashed up companies looking for growth from acquisitions. It will be the perfect time to go out and soak companies that the general investment community are selling, in response to the weaker gold price outlook. Rationalisation of the sector will become the new gold thematic.

Wind blows the right way for coal

It seemed to go unnoticed last week, but Trump announced that he was overturning the Obama-era environmental rules on power-plant emissions that were the first steps in shutting down coal-fired power stations. This is all part of the push and pull we are seeing as the world comes to grips with the fact that humans will always cause pollution. There is no avoiding it, short of massive reductions in the global population (and no-one is suggesting that).

Without getting into the environmental debate here, we can state that the the coal companies in the USA are going to find life easier in the foreseeable future as a result of

Trump's announcement. It is not quite back to the past, as there have already been substantial cuts in coal-fired power generation with the coal mining workforce dropping from 90,000 to 53,000 recently, but there will certainly be room for some sort of rebound.

Graphene-enhanced tyres give 40% better wear resistance

We already have bicycle tyres with graphene in them selling in Sydney bicycle shops for \$70 each, so it should not come as a surprise to hear that the application of graphene has been successfully extended to automotive tyres. Perpetuus Advanced Materials, a UK-based company, has spent the last six months testing graphene-enhances tyres on high mileage, commercial light vehicles.

We have been aware of interest being shown by a number of parties around the globe in graphene-enhanced tyres, but this seems to be the most advanced release made by any company. It says that it is in collaboration with seven tyre manufacturers covering passenger vehicles, motorcycles, bicycles and even aircraft tyres.

So far the public information is somewhat scant on technical details, so we don't know whether the graphene is the true 1-10 layer product or the less expensive and lower quality graphene nanoplatelets (GNPs). The suggestion that Pertetuus's product is a substitute for carbon black, and it is sourced from graphite from the Aukam mine in Namibia, suggests it is the lower quality.

The owner of Aukum, Next Graphite Inc (GPNE), released a presentation in October 2016, saying it sampled flake graphite dumps that assayed 42% Cg, and it could achieve a concentrate grade of 97.1%. In May 2018, it said that it has a simple crushing, grinding and flotation system with a current capacity of 650 tpa, with a play to lift this to 11,000 tpa (I am assuming this is concentrate capacity, not feedstock - which it says averages 56% Cg - but I can't be sure). Despite searching the company's web site I have not been able to find any geological reports or resource statements. Elsewhere I did come across a report by Roger Moss, dated 12 September 2016, that reviews historical mining and other geological information, describing it as having the characteristics of a vein-style graphite deposit. It refers to a 25 tonne bulk sample recovering grades ranging from 11.39% Cg to 72% Cg.

But this is getting off the point when it comes to graphene. That point is that graphene-based products can significantly enhance the performance of automotive tyres. There could easily be demand for 5-10,000 tpa of graphene just for premium tyres, which is a multiple of current world production of graphene. We still need to figure out which type graphene works best and what the economics are, but that takes time. Any company in the graphene space should be encouraged to hear of the news, as should the shareholders.

What about investing in unlisted exploration companies?

When markets are depressed and you can't move volume in the smaller end without seriously depressing a share price, such as we are seeing now, one wonders what is the benefit of owning listed securities. Looking at the prices every day is just depressing. So, what about the idea of holding unlisted investments as an alternative?

It is common to divert some funds to unlisted positions when we are flush with cash, but when the market is depressed and there is "value" left right and centre it is normal to do some bottom feeding while at the same time hoping that we are not coming in too soon. At the same time the weak market will also throw up bargains in the non-listed sphere.

Andean - an high grade copper/gold opportunity

I was shown one such opportunity during the week that is worth passing on to you; *Andean Mining*. Its EI Dovio high-grade copper gold project in Colombia is well beyond the high-risk grass roots exploration stage due to 22 drill holes and trenching demonstrating a zone of prospective mineralization measuring 1 km long and 10-68m wide, to at least 200m deep. It has passed the kill or proceed decision point and is now entering the sweet spot for exploration - the resource expansion stage - where serious money can be made.

We can loosely place South American copper/gold projects into three categories.

- i) Porphyry projects can be huge with billions of tonnes of mineralization but they are not suitable for juniors. They can easily take 10 years to define and hundreds of millions of dollars just to explore. I turn off when the word porphyry is mentioned in the context of a market capitalization of less than \$20m.
- ii) At the other end of the scale there are countless narrow, small scale mining ventures that might show good grade but they are too small to justify stand-alone treatment facilities. Sure, they might be an indicator of something larger, but they almost always end up going nowhere. They are insignificant in the context of an ASX listed vehicle and the costs of maintaining that listing.
- iii) Somewhere in between these two project extremes you will find projects with sufficient dimensions to warrant a dedicated treatment facility, and large enough to achieve market capitalisations well in excess of \$100m the typical institutional lower limit. The El Dovio copper/ gold project fits neatly into this category, though it is unlisted at this juncture.

Location and exploration history of El Dovio

Located at an elevation of 1,400m, mineralisation at El Dove was first encountered in 1974, but lack of roads for access delayed any further work until the 1980s. In 1988, a short adit was excavated on high grade mineralisation at Soberana Creek. In 1991-93, 691m of small diameter (A&B) core drilling from underground workings was recovered from 15 holes but only 41m were assayed. The average grades were 2.4% Cu, 5 gpt Au, 24 gpt Ag and 2% Zn over widths ranging from 3 to 15m.

Having set the scene we should now look at the geological merit. The high grade mineralisation appears in structurally controlled veins surrounded by broad zones of stockwork, characteristic of stringer zones that appear beneath VMS systems. The main mineralised zone, Sabana Blanca, is

hosted in brecciated and altered marine volcanic and intrusive rocks and remains open in all directions. There are two parallel zones of high grade mineralisation, each 4-6m wide, within a broader mineralised halo.

The high grade nature of the veins is demonstrated by the following drill intercepts from Sabana Blanca;

BH 02: 5.6m at 7.7% Cu, 5.70 gpt Au
BH 04: 6.3m at 5.5% Cu, 0.65 gpt Au
BH 05: 6.8m at 5.8% Cu, 5.65 gpt Au
BH 06: 2.4m at 4.5% Cu, 3.90 gpt Au
BH 07: 8.7m at 2.7% Cu, 2.48 gpt Au
BH 08: 4.0m at 1.7% Cu, 2.80 gpt Au

Good metallurgy is a bonus

Metallurgy can often be a stumbling block for mining projects but not here. Excellent recoveries of 96.4% of the contained gold, 97.8% of the copper, 91.1% of the silver and 96.8% of the zinc have been recovered from a composite bulk sample. Favourable flotation test results were achieved using standard froth flotation after crushing and grinding to 80% passing 75 μ m.

Work program over 2-3 years

Over the next three years Andean plans to spend US\$3m to earn a 65% interest in the project from the current owner, Newrange Gold Corp, a TSX-listed company. This will involve the drilling of 15,000 m of core in approximately 50 holes to advance a system which could host more than 4 Mt of ore at the Sabana Blanca zone. The Brazo zone, NE of Sabana Blanca, has an exploration potential for another 10 Mt. All up, with a bit of arm waving, there is potential for 14 Mt at 3-4% Cu and 4.5% gold.

Being private means dealing flexibility

Being a private venture at this point means that the project doesn't have to carry all of the listing and compliance costs that will typically consume \$0.75-\$1m p.a., for marginal shareholder benefit. It also means that all of the monetisation options remain open. A trade sale would be easier, but if the market is running hot in 2-3 years time, there is always the possibility of doing a well-priced IPO as the smartest exist strategy, after having largely de-risked the resource estimation phase.

Possible economics

The best way to form an idea of value for a project like El Dovio ahead of the calculation of resources is to look at representative grades. Taking the grades to date of 3.5% Cu and 4.5 gpt Au, you get a copper equivalent of 6.6%. Very few projects you see will fall into this sweet spot. If there was a resource of 3-4 Mt that could support a 200-365,000 tpa operation, which might cost US\$50-75m to construct, the operating surplus based on cash costs of US\$120-\$150 pt of ore could be US\$30-60m p.a. However, no-one is suggesting that we should be buying shares with a view to starting a mine. We should be looking at this to the advantage of the resource expansion phase where the best returns on investments are usually made.

Capital raising now

Andean is planning to raise a minimum of \$1.5m now, and another \$1.5m in 18 months, though it would take some of the second tranche earlier if it was available. This is being done by a total placement of 15/30 million shares at 10¢

with 1 for 1 options (10¢ strike). The post placement issued capital would be 94 mill. (assuming the full \$3m is raised) giving a capitalisation of \$9.4m (pre-option conversion). The company would own 65% of the project, meaning that 100% of project would be valued at A\$14.4m. To determine if this is good value, look at its peers for comparison.

One such comparison could be Venturex Resources (VXR) with its Sulphur Springs project in WA (though this is more of a zinc project). Sulphur Springs has open pit and underground reserves of 7.2 Mt at 1.2% Cu, 3.5% Zn and 14.4 gpt Ag. The market capitalisation is \$44m after a 15 into 1 consolidation.

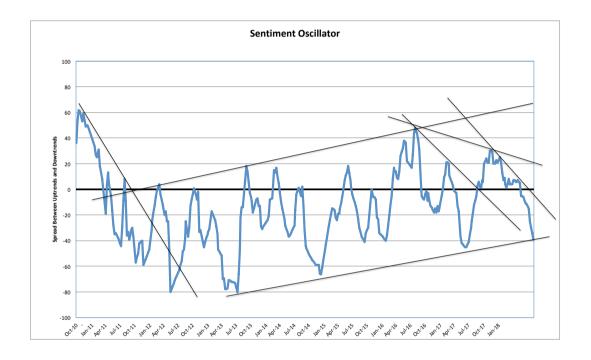
Management is known, and experienced

Management is always the final and the most important consideration for any investment of this type. Here we have a gang of four that were involved in Metminco - Phil Wing,

Jamie Green and Bill Etheridge - led by geologist William Howe. Metminco got to a market capitalisation of hundreds of millions of dollars before the enormity of the 3 billion tonne Los Calatos porphyry copper project came home to roost. Junior companies can't run with a US\$3bn capex project irrespective of what the spread sheet tells you. The El Dovio project is much more realistic and digestible.

So, if this sort of investment looks interesting to you, drop me a line on wgrigor@fareastcapital.com.au and I can give you more information.

Disclosure: Interests associated with the author intend to take up shares in Andean, and will receive fees on funds raised.



Sentiment Indicator: We are right the support line. If this holds, we can start to buy again. If it is breached, there is still more pain to come; 18% (20%) of the charts were in uptrend and 57% (54%) in downtrend on Friday's close.

Detailed Chart Comments

NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant. Please note that this list is a cross section of the market. It IS NOT a list of recommendations.

Indices	Code		Trend Comment	
All Ordinaries	XAO		in a rising wedge	
Metals and Mining	XMM		down	
Energy	XEJ		correction from highs	
Stocks	Code		Trend Comment (updated comments in bold)	Main Interest
Adriatic Resources	ADT		down now	zinc
Aeon Metals	AML	1	breached support line	copper + cobalt
Aeon Metals Alacer Gold	AML AQG		breached support line heavy fall	copper + cobalt gold – production

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Acacia Resources	AJC	Sideways at the bottom	coal
Alchemy Resources	ALY	base forming	nickel, cobalt
Alicanto Minerals	AQI	down	gold exploration
Allegiance Coal	AHQ	holding LT uptrend	coal
Alliance Resources	AGS	continuing down	gold exploration
Altech Chemicals	ATC	sideways	industrial minerals - synthetic sapphire
Anova Metals	AWV	new low on poor production report	gold
Apollo Consolidated	AOP	rallying	
•	AXE		gold exploration
Archer Exploration	ARD	breach of support	magnesite, graphite
Argent Minerals	AMI	down	polymetallic
Aurelia Metals		new high	gold + base metals
AusTin	ANW		tin, cobalt
Australian Bauxite	ABX	surged through downtrend	bauxite
Australian Potash	APC	testing downtrend	potash
Australian Mines	AUZ	down	cobalt/nickel
Australian Vanadium	AVL	new high	vanadium
Bounty Coal	B2Y	down	coal
BHP	ВНР	short term down, but approaching support	diversified
Base Resources	BSE	sideways, but softer last week	mineral sands
Bathurst Resources	BRL	slump	coal
Battery Minerals	BAT	collapse to new low	graphite
BBX Minerals	BBX	down	gold
Beach Energy	BPT	near highs	oil and gas
Beadell Resources	BDR	another new low	gold
Bellevue Gold	BGL	testing downtrend	gold
Berkeley Energia	ВКҮ	breached downtrend, but pullback	uranium
Berkut Minerals	ВМТ	new low	cobalt
Blackham Resources	BLK	down again	gold
Blackstone Minerals	BSX	new low	gold, cobalt
Broken Hill Prospect.	BPL	down	minerals sands, cobalt
Buru Energy	BRU	slump	oil
Cardinal Resources	CDV	testing uptrend, down	gold exploration
Cassini Resources	CZI	sideways	nickel/Cu expl.
Celsius Resources	CLA	back in downtrend	copper/cobalt
Chalice Gold	CHN	testing downtrend	gold
Cobalt Blue	СОВ	free fall on study results	cobalt
Comet Resources	CRL	new low	graphite/graphene
Crusader Resources	CAS	spike out of downtrend then pullback	gold/iron ore
Dacian Gold	DCN	down heavily	gold exploration
			-
Danakali Daray Minarala	DNK	less steep uptrend	potash
Doray Minerals	DRM	trying to hold uptrend	gold
Eden Innovations	EDE	down	carbon nanotubes in concrete
Egan Street Resources	EGA	new low	gold
Emerald Resource	EMR	short term higher	gold
Evolution Mining	EVN	down	gold
excelsior Gold	EXG	down	gold
AR	FAR	sideways break through uptrend	oil/gas
First Cobalt	FCC	surge higher	cobalt
ïrst Graphene	FGR	holding uptrend	graphene
rontier Diamonds	FDX	new low	diamonds
ortescue Metals	FMG	rallied out of steepest, but still in LT downtrend	iron ore
Galaxy Resources	GXY	longer term downtrend confirmed	lithium
Galilee Energy	GLL	retaining uptrend	oil and gas, CBM
Gascoyne Resources	GCY	down	gold

Global Geoscience	GSC	testing downtrend	lithium
Gold Road	GOR	breached uptrend	gold exploration
Golden Rim	GMR	new low	gold exploration
Graphex Mining	GPX	new low	graphite
Heron Resources	HRR	downtrend persisting	zinc
Highfield Resources	HFR	down again	potash
Highlands Pacific	HIG	still in uptrend	copper, nickel
Hillgrove Resources	HGO	sideways	copper
Iluka Resources	ILU	crunched down	mineral sands
Image Resources	IMA	resumed LT uptrend	mineral sands
Independence Group	IGO	breached support line	gold, nickel
Jervois Mining	JVR	strong bounce	nickel/cobalt
Karoon Gas	KAR	new low	gas
Kasbah Resources	KAS	still in downtrend	tin
Kibaran Resources	KNL	sideways	graphite
Kin Mining	KIN	trying to form a base	gold
Legend Mining	LEG	strongly higher	exploration
Lepidico	LPD	continuing down	lithium
Lithium Australia	LIT	testing downtrend	lithium
Lucapa Diamond	LOM	breached downtrend	diamonds
Macphersons Res.	MRP	rallying	silver
Mako Gold	MKG	down	gold
Marmota	MEU	sideways	gold exploration
MetalsX	MLX	down again	tin, nickel
Metro Mining	ММІ	fallen back to support	bauxite
Mincor Resources	MCR	breached uptrend	nickel
Mineral Deposits	MDL	strongly higher on takeover approach	mineral sands
Myanmar Minerals	MYL	testing uptrend	zinc
MZI Resources	MZI	bounced off low	mineral sands
Neometals	NMT	down	lithium
Northern Cobalt	N27	down again	cobalt
Northern Minerals	NTU	sideways	REE
Northern Star Res.	NST	still strong	gold
NTM Gold	NTM	continuing downtrend	gold
Oceana Gold	OGC	rising again	gold
Oklo Resources	оки	down	gold expl.
Orecorp	ORR	breached downtrend	gold development
Orinoco Gold	OGX	down	gold development
Orocobre	ORE	secondary downtrend	lithium
Oz Minerals	OZL	struggling with uptrend	copper
Pacific American Coal	PAK	still in uptrend	coal, graphene
Pantoro	PNR	on support line	gold
Panoramic Res	PAN	down	nickel
Peel Mining	PEX	downtrend confirmed	copper
Peninsula Energy	PEN	risen to resistance line	uranium
Perseus Mining	PRU	breaching uptrend	gold
Pilbara Minerals	PLS	down	lithium/tantalum
PNX Metals	PNX	lower	gold, silver, zinc
Polarex	PXX	still down	polymetallic
Prodigy Gold	PRX	down	gold exploration
Red5	RED	struggling	gold
Red River Resources	RVR	down	zinc
Regis Resources	RRL	down	gold
Resolute Mining	RSG	testing downtrend	gold

RIO	RIO		down	diversified
Salt Lake Potash	SO4		re-entering downtrend	potash
Saracen Minerals	SAR		down	gold
St Barbara	SBM		breached uptrend	gold
Sandfire Resources	SFR		down	copper
Santana Minerals	SMI		new low	silver
Santos	STO		back to highs	oil/gas
Sheffield Resources	SFX		rising again	mineral sands
Sino Gas & Energy	SEH		confirming uptrend	gas
Sipa Resources	SRI		sideways	general exploration - Ni,Cu, Co, Au
Stanmore Coal	SMR		new high	coal
Sundance Energy	SEA		testing uptrend	oil/gas
Syrah Resources	SYR		new low	graphite
Talga Resources	TLG		down	graphite
Tanami Gold	TAM		slump	gold
Tiger Realm	TIG		down	coal
Triton Minerals	TON		down	graphite
Troy Resources	TRY		down	gold
Tyranna Resources	TYX		Sideways at the bottom	gold exploration
Vango Mining	VAN		correcting	gold
Vector Resources	VEC		back to lows	gold
Vimy Resources	VMY		testing downtrend	uranium
Volt Resources	VRC		down	graphite
West African Resources	WAF		breached downtrend, but then a slump	gold
Westwits	WWI		down	gold exploration/development
Western Areas	WSA		down	nickel
Whitehaven Coal	WHC		softer	coal
Totals	18%	25	Uptrend	
	57%	79	Downtrend	
		138	Total	

Guides to Chart Interpretations

- Charts usually go pass from one trend (up or down) into the other via a period of indecision and uncertainty during which the trend can either recover or change. This period is signified by the orange colour. The orange represent both the greatest risk and greatest reward possibilities.
- Once a chart is in confirmed up or downtrends it is not uncommon for 10-20% of that trend to have already transpired.
- There are trends within trends. The focus of this chart review is the immediate trend that affects the sentiment i.e. it can be a downtrend within a long-term uptrend.
- Not every chart warrants a new comment every week. The new comments are in bold type. Grey type comments may be dated.
- Individual charts provide a single view. It is valuable to look at charts of other companies in similar commodities, and the overall sentiment is also very valuable. Not many stocks can swim against the tide.
- We periodically add or delete charts, some times for obscure reasons. If a chart consistent gives poor signals or is very erratic, we may delete it. Sometimes we add a chart because we want to see what all the fuss is about. We do have a preference for charting stocks that we cover in our research as well.
- Errors and omissions may occur from time to time, especially in fast moving markets.

Amber Lights in Tables: Just a reminder if when the amber light is used in the table – it is when the charts are ambiguous or when there is a change of trend taking place. If a chart is breaching a downtrend it can either be a positive sign or a trap. Only once it has done more work can it be confirmed as a new uptrend. Maybe it is a new uptrend (or conversely a new downtrend); the risk takers can decide to jump on board early (or sell). They will maximise their profits (or minimise their losses if indeed it is the start of the new uptrend (downtrend). More risk-averse investors should wait a little longer, being prepared to give up some of the gains in return for greater certainty.

Weightings of Sectors Represented in the Company Charts				
Sector	No. of Companies	Weighting		
Gold	32	23.2%		

Weightings of Sectors Represented in the Company Charts			
Gold Exploration	15	10.9%	
Coal	10	7.2%	
Copper	9	6.5%	
Graphite	9	6.5%	
Oil/Gas	8	5.8%	
Mineral Sands	7	5.1%	
Cobalt	7	5.1%	
Lithium	7	5.1%	
Zinc	6	4.3%	
Silver	3	2.2%	
Nickel	5	3.6%	
Potash/Phosphate	4	2.9%	
Uranium	3	2.2%	
Bauxite	2	1.4%	
Tin	3	2.2%	
Diamonds	3	2.2%	
Iron Ore	1	0.7%	
Other	4		
Total	138		

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